

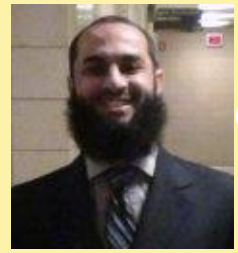
**Ahmed Gabr**

**Project 8: Third Generation Spectral Engineering for Increased Solar Cell Efficiencies.**

**Supervisor: Karin Hinzer**

**University of Ottawa, PhD candidate, Electrical Engineering**

**Attended: Annual Network Meeting, Scientific Conference and Industry Workshop**



PVIN gave the opportunity to meet researchers in photovoltaics across Canada to gather and share ideas. During the past week, I got to know many people in different universities working on Solar cells. Most interestingly is that I did not know about the new research on photovoltaics, but also the political as well as the economic sides of photovoltaics in Canada. The industry workshop was very beneficial to educate the researchers as well as the public of the potential and challenges of photovoltaics.

### ***Questions and Responses***

What is the latest research on organic solar cells and what are the challenges?

Organic solar cells have the advantages of the extremely low cost, low weight and flexibility. However, organic solar cells have low efficiencies, with the world record of 6%. Some of the challenges is harvesting of light, stability and charge mobility. One of the research projects is to find new polymers with better characteristics that will overcome these challenges.

Why hybrid solar cells?

One of the challenges of organic photovoltaics is the low electron mobility. One way to overcome this problem is to replace the electron acceptor layer with ZnO. Although the efficiencies are still low, it shows promising results for hybrid photovoltaics.

Is the solar cell industry growing in Canada?

It was interesting to attend the Industry workshop. The politics behind the industry is complicated, though it was interesting to hear about the large projects in Canada especially the 80MW farm, which is the largest in the world as of 2010. In addition, I got to know the challenges and opportunities from a number of manufacturers, designers, and installers of photovoltaics.